



## Complete Summary

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### GUIDELINE TITLE

Adult low back pain.

### BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2006 Sep. 65 p. [124 references]

### GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Routine prenatal care. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Aug. 80 p.

### \*\* REGULATORY ALERT \*\*

### FDA WARNING/REGULATORY ALERT

**Note from the National Guideline Clearinghouse:** This guideline references a drug(s) for which important revised regulatory information has been released.

- [June 15, 2005, Non-Steroidal Anti-Inflammatory Drugs \(NSAIDs\)](#): U.S. Food and Drug Administration (FDA) recommended proposed labeling for both the prescription and over the counter (OTC) NSAIDs and a medication guide for the entire class of prescription products.
- [April 7, 2005, Non-steroidal anti-inflammatory drugs \(NSAIDs\) \(prescription and OTC, including ibuprofen and naproxen\)](#): FDA asked manufacturers of prescription and non-prescription (OTC) non-steroidal anti-inflammatory drugs (NSAIDs) to revise their labeling to include more specific information about potential gastrointestinal (GI) and cardiovascular (CV) risks.

### COMPLETE SUMMARY CONTENT

\*\* REGULATORY ALERT \*\*

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

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## SCOPE

### DISEASE/CONDITION(S)

- Acute low back pain
- Chronic low back pain
- Acute sciatica/radiculopathy
- Chronic sciatica/radiculopathy

### GUIDELINE CATEGORY

Diagnosis  
Evaluation  
Management  
Treatment

### CLINICAL SPECIALTY

Chiropractic  
Family Practice  
Internal Medicine  
Orthopedic Surgery  
Physical Medicine and Rehabilitation  
Radiology  
Sports Medicine

### INTENDED USERS

Advanced Practice Nurses  
Allied Health Personnel  
Health Care Providers  
Health Plans  
Hospitals  
Managed Care Organizations  
Nurses  
Physician Assistants  
Physicians

### GUIDELINE OBJECTIVE(S)

- To increase the use of the recommended conservative approach as first-line treatment -- such as activity, self-care, and analgesics -- for patients with low back pain
- To reduce unnecessary imaging studies in patients with acute low back pain
- To increase the appropriate assessment of patients with chronic low back pain

- To increase the use of appropriate outcome tools (such as Oswestry Outcome Tool or other)

## **TARGET POPULATION**

Adult patients age 18 and over in primary care who have symptoms of low back pain or sciatica

**Note:** The guideline focuses on acute and chronic management, including indications for medical non-surgical or surgical referral. For workers' compensation patients, check with state guidelines where the patient resides and where the injury took place, or in Minnesota, see the workers' compensation treatment parameters at <http://www.doli.state.mn.us/pdf/treatparam.pdf>.

## **INTERVENTIONS AND PRACTICES CONSIDERED**

### **Evaluation**

1. Phone triage or medical screening evaluation
2. Medical history, including evaluation of cancer risk factors, spinal infection, Cauda Equina signs and symptoms, neurologic involvement, and psychosocial factors
3. Physical examination including palpation for spinal tenderness, neuromuscular testing, and bilateral straight leg raise
4. Laboratory testing (complete blood count [CBC] and erythrocyte sedimentation rate) if suspicion of cancer or infection
5. Lumbar spine x-rays (anterior to posterior [AP] and lateral [LAT] views) for specific indications
6. Symptom classification by duration and location
7. Early referral to physical therapy or spine care specialist

### **Treatment/Management**

1. Home self care, including patient education, anti-inflammatory medication (e.g., aspirin, ibuprofen, naproxen sodium); or acetaminophen; ice packs or heat as preferred on sore area; careful reintroduction of light-duty activity, along with regular walking; safe back exercises; and stress management
2. Acute low back pain or sciatica/radiculopathy
  - Conservative treatment, including patient education; cold and heat therapies; analgesic medication; muscle relaxants; and activity recommendations including exercise programs
  - Discharge (return to work) or comprehensive reevaluation
  - Follow-up visits that include subjective pain rating, functional assessment, and clinician's objective assessment
  - Referral to trained spine therapy professional
3. Chronic low back pain:
  - Lumbar spine x-rays (AP and LAT views)
  - Active rehabilitation including patient education (good body mechanics), resumption of normal light activities, exercise program, management of psychosocial factors, and multidisciplinary approach
  - Consultation with/referral to a surgical or nonsurgical back specialist
4. Chronic sciatica/radiculopathy:

- Lumbar spine computed tomography (CT) or magnetic resonance imaging (MRI) if patient is potential surgical candidate
- Other special diagnostic tests (bone scan, electromyography, computed tomography enhanced myelogram, myelogram, and radionuclide studies) for specific indications
- Active rehabilitation
- Epidural steroid injection
- Referral to a surgical or non-surgical back specialist

### **Primary Prevention**

1. Patient education regarding healthy lifestyle and general aerobic fitness with emphasis on patient responsibility for good back care, workplace ergonomics, and home self-care

### **MAJOR OUTCOMES CONSIDERED**

- Number, duration, and intensity of pain episodes and recurrences
- Change in functional status (strength, mobility, endurance) associated with low back pain
- Time required to return to work
- Utilization of health care resources
- Diagnostic accuracy of various imaging techniques including lumbar spine computed tomography, magnetic resonance imaging, and computed tomography myelography
- Patient satisfaction

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

Not stated

### **NUMBER OF SOURCE DOCUMENTS**

Not stated

### **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Given)

### **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the

conclusion. Individual studies are classed according to the system presented below, and are designated as positive, negative, or neutral to reflect the study quality.

### **Conclusion Grades:**

**Grade I:** The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

**Grade II:** The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

**Grade III:** The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

**Grade Not Assignable:** There is no evidence available that directly supports or refutes the conclusion.

### **Study Quality Designations:**

The quality of the primary research reports and systematic reviews are designated in the following ways on the conclusion grading worksheets:

**Positive:** indicates that the report or review has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis.

**Negative:** indicates that these issues (inclusion/exclusion, bias, generalizability, and data collection and analysis) have not been adequately addressed.

**Neutral:** indicates that the report or review is neither exceptionally strong nor exceptionally weak.

**Not Applicable:** indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

### **Classes of Research Reports:**

A. Primary Reports of New Data Collection:

Class A:

- Randomized, controlled trial

Class B:

- Cohort study

Class C:

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

Class D:

- Cross-sectional study
- Case series
- Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R:

- Consensus statement
- Consensus report
- Narrative review

Class X:

- Medical opinion

**METHODS USED TO ANALYZE THE EVIDENCE**

Review of Published Meta-Analyses  
Systematic Review with Evidence Tables

**DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Not stated

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

Not applicable

## **COST ANALYSIS**

The guideline developers reviewed published cost analyses.

## **METHOD OF GUIDELINE VALIDATION**

Clinical Validation-Pilot Testing  
Internal Peer Review

## **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

### **Institute Partners: System-Wide Review**

The guideline draft, discussion and measurement specification documents undergo thorough review. Written comments are solicited from clinical, measurement, and management experts from within the member medical groups during an eight-week period of "Critical Review."

Each of the Institute's participating medical groups determines its own process for distributing the guideline and obtaining feedback. Clinicians are asked to suggest modifications based on their understanding of the clinical literature coupled with their clinical expertise. Representatives from all departments involved in implementation and measurement review the guideline to determine its operational impact. Measurement specifications for selected measures are developed by ICSI in collaboration with participating medical groups following general implementation of the guideline. The specifications suggest approaches to operationalizing the measure.

### **Guideline Work Group**

Following the completion of the "Critical Review" period, the guideline work group meets 1-2 times to review the input received. The original guideline is revised as necessary and a written response is prepared to address each of the suggestions received from medical groups. Two members of the Committee on Evidence Based Practice carefully review the Critical Review input, the work group responses, and the revised draft of the guideline. They report to the entire committee their assessment of two questions: 1) Have the concerns of the medical groups been adequately addressed? 2) Are the medical groups willing and able to implement the guideline? The committee then either approves the guideline for pilot testing as submitted or negotiates changes with the work group representative present at the meeting.

### **Pilot Test**

Medical groups introduce the guideline at pilot sites, providing training to the clinical staff and incorporating it into the organization's scheduling, computer and other practice systems. Evaluation and assessment occurs throughout the pilot test phase, which usually lasts for six months. Comments and suggestions are solicited in the same manner as used during the "Critical Review" phase.

The guideline work group meets to review the pilot sites' experiences and makes the necessary revisions to the guideline, the Committee on Evidence Based Practice reviews the revised guideline and approves it for implementation.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

**Note from the National Guideline Clearinghouse (NGC) and the Institute for Clinical Systems Improvement (ICSI):** For a description of what has changed since the previous version of this guidance, refer to [Summary of Changes -- September 2006](#).

The recommendations for the management of adult low back pain are presented in the form of an algorithm with 23 components, accompanied by detailed annotations. An algorithm is provided for [Adult Low Back Pain](#); clinical highlights and selected annotations (numbered to correspond with the algorithm) follow.

Class of evidence (A-D, M, R, X) and conclusion grade (I-III and Not Assignable) definitions are repeated at the end of the "Major Recommendations" field.

### Clinical Highlights

- Cauda Equina syndrome is a condition requiring emergent evaluation and surgery. A patient should be referred immediately to the emergency room (ER) if any of the following emergent symptoms are present (*Annotations #1, 2*):
  - Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence)
  - Sudden onset or otherwise unexplained bilateral leg weakness
  - Saddle numbness
- A patient should be offered an appointment within 24 hours if any of the following symptoms are present (*Annotation #2*):
  - Fever 38 degrees C or 100.4 degrees F for greater than 48 hours
  - Unrelenting night pain or pain at rest
  - New onset (less than six weeks) of progressive pain with distal (below the knee) numbness or weakness of leg(s)
  - Leg weakness
  - Progressive neurological deficit
  - Patient requests for same-day appointment
- Lumbar spine x-rays should be considered when the following red flag indications exist (*Annotation #4*):
  - Unrelenting night pain or pain at rest (increased incidence of clinically significant pathology)
  - History of or suspicion of cancer (rule out metastatic disease)



- Fever above 38 degrees C (100.4 degrees F) for greater than 48 hours
- Osteoporosis
- Other systemic diseases
- Neuromotor or sensory deficit
- Chronic oral steroids
- Immunosuppression
- Serious accident or injury (fall from heights, blunt trauma, motor vehicle accident) – this does not include twisting or lifting injury unless other risk factors are present (e.g., history of osteoporosis)
- Clinical suspicion of ankylosing spondylitis
- Red flag and psychosocial indicators should be reviewed and evaluated at each contact/visit. While there is no outcome data related to this, an assessment that includes a subjective pain rating, functional assessment, and a clinician's objective assessment should be done at each visit. (*Annotations #1, 4, 10, 16, 17*)
- Emphasize patient education and conservative home self-care which includes limited bed rest, early ambulation, postural advice, resumption of light-duty activities, use of ice and heat, anti-inflammatory and analgesic over-the-counter medication, and early return to work or activities. (*Annotation #5*)
- Based on history and physical, classify symptoms by duration and location into appropriate categories: (*Annotation #10*)
  - Acute low back pain
  - Chronic low back pain
  - Acute sciatica
  - Chronic sciatica
- The natural history of low back pain is that most patients will experience partial improvement in four to six weeks and will have a recurrence of low back pain in 12 months. (*Annotations #5, 10*)

Patients with acute low back pain should be advised to stay active and continue ordinary daily activity within the limits permitted by the pain. For chronic back pain, there is evidence that exercise therapy is effective. (*Annotation #10*)

- Consideration should be given to epidural steroid injections if patient is being considered for surgical interventions. Epidural steroid injections should not be done without fluoroscopic guidance. (*Annotation #21*)
- Referrals for advanced imaging studies should be limited to patients with (*Annotation #19*):
  - Progressive neurological deficits
  - Minimal to no improvement of radicular symptoms despite six weeks of conservative treatment
  - Uncontrolled pain
  - Cauda Equina Syndrome

### **Adult Low Back Pain Algorithm Annotations**

#### **1. Patient Calls/Presents with Low Back Pain or Sciatica/Radiculopathy**

##### **Key Points:**

- Medical screening for low back pain should be performed via triage evaluation.
- If low back pain may be related to a possible work-related injury or workers' compensation claim, it is important to follow the Worker's Compensation Treatment Guidelines.

The patient calls the clinic or presents as a walk-in at the clinic. A medical screening should be performed via triage evaluation for phone contact and via provider examination for walk-ins. Each medical group may modify this proposed movement as needed.

The triage evaluation should first rule out emergent condition such as Cauda Equina Syndrome.

#### General Assessment:

- Recent back procedure or epidural anesthesia
- Location of pain:
  - Low back pain (LBP) (does not radiate past the knee)
  - Sciatica (LBP with radiation past the knee)
- Duration of symptoms, including date of injury or onset of symptoms:
  - Six weeks or less is acute
  - More than six weeks is chronic
- If injury: How did injury occur?
- Unrelenting or severe pain
  - Scale of 0 to 10, with 10 indicating most severe pain
- Other medical conditions
- History of previous back pain or surgery
- Psychosocial indications

For worker's compensation patients, check with state guidelines where the patient resides and where the injury took place; or in Minnesota, see the worker's compensation treatment parameters at <http://www.doli.state.mn.us/pdf/treatparam.pdf>.

#### **Patient Education Regarding Primary Prevention**

Providers in clinic systems are encouraged to provide primary education through other community education institutions/businesses to develop and make available patient education materials concerning back pain prevention and care of the healthy back. Emphasis should be on patient responsibility, workplace ergonomics, and home self-care treatment of acute low back pain. Employer groups should also make available reasonable accommodations for modified duties or activities to allow early return to work and minimize the risk of prolonged disability. Education is recommended for frontline supervisors in occupational strategies to facilitate an early return to work and to prevent prolonged disabilities.

***Evidence supporting this recommendation is of class: R***

For other patient education resources, please see the Support for Implementation section of the original guideline document.

## 2. **Emergent or Urgent?**

### **Emergent - refer to emergency room (ER) for immediate evaluation**

- Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence)
- Sudden onset or otherwise unexplained bilateral leg weakness
- Saddle numbness

### **Urgent - appointment within 24 hours:**

- Fever 38 degrees C or 100.4 degrees F for greater than 48 hours
- Unrelenting night pain or pain at rest
- New onset (less than six weeks) of progressive pain with distal (below the knee) numbness or weakness of leg(s)
- Leg weakness
- Progressive neurological deficit
- Patient requests same-day appointment

## 3. **Evaluation Indicated?**

Appointment within two to seven days **if the answer to any of the following is positive:**

- Exertion injury (e.g., lifting, digging, reaching)
- History of back symptoms - has been seen before, at least once
- Chronic back pain lasting longer than six weeks
- Unexplained weight loss (greater than 10 pounds in six months)
- Over age 50
- History of cancer

## 4. **Primary Care Evaluation and X-Ray Indications**

### **Key Points:**

- Fear, financial problems, anger, depression, job dissatisfaction, family problems or stress can contribute to prolonged disability.
- Generally anterior to posterior (AP) and lateral (LAT) views x-rays are not helpful in the acute setting

This includes a history and physical and consideration of psychosocial factors.

**If a serious underlying disease such as cancer, Cauda Equina Syndrome, significant or progressive neurologic deficit, or other systemic illness is present, consult or refer.**

### **Patient History Includes:**

Cancer risk factors:

- 50 years old or older
- History of cancer
- Unexplained weight loss
- Failure to improve after four to six weeks of conservative LBP therapy

If all four of the above risk factors for cancer are absent, studies suggest that cancer can be ruled out with 100% sensitivity.

Risk factors for possible spinal infection:

- Intravenous (IV) drug use
- Immunosuppression
- Urinary infection

Signs and symptoms of Cauda Equina Syndrome:

- Urinary retention (if no urinary retention, the likelihood of Cauda Equina Syndrome is less than 1 in 10,000)
- Saddle anesthesia, unilateral or bilateral sciatica, sensory and motor deficits, and abnormal straight leg raising are all common.

Signs or symptoms of neurologic involvement:

- Complaint of numbness or weakness in the legs
- Sciatica with radiation past the knee (increases the likelihood of a true radiculopathy rather than pain radiating only to the posterior thigh)
- Sciatica has such a high sensitivity (95%) that its absence makes lumbar disc herniation unlikely
- The likelihood of disc herniation in a patient without sciatica would be 1 in 1,000
- Because more than 95% of lumbar disc herniations occur at the L4-5 or L5-S1 levels, the neurologic exam should focus on the L5 and S1 nerve roots; however, upper lumbar nerve root involvement may be suggested when pain conforms to L2, L3, or L4 dermatomal distribution and is accompanied by anatomically congruent motor weakness or reflex changes.

Psychosocial indications:

- Belief that pain and activity are harmful
- "Sickness behaviors" such as extended rest
- Depressed or negative moods, social withdrawal
- Treatment that does not fit best practice
- Problems with claim and compensation
- History of back pain, time off, or other claims
- Problems at work or low job satisfaction
- Heavy work, unsociable hours
- Overprotective family or lack of support

Psychosocial indications can be barriers to recovery. Consider factors such as fear, financial problems, anger, depression, job dissatisfaction, family problems, or stress which can contribute to prolonged disability. Refer to the National Guideline Clearinghouse (NGC) summary of the Institute for Clinical Systems Improvement (ICSI) guideline [Major Depression in Adults in Primary Care](#) for more information.

For more information on psychosocial indications, see the New Zealand Acute Low Back Pain Guide: Incorporating the Guide to Assessing Psychosocial Yellow Flags in Acute Low Back Pain, 2003.

(See Appendix C, "Psychosocial Screening and Assessment Tools" in the original guideline document.)

### **Physical Examination Should Document:**

Palpation for spinal tenderness

Neuromuscular testing to include:

- Ankle dorsiflexion strength
- Great toe dorsiflexion strength
- Ankle reflexes
- Knee reflexes
- Sensory exam with pinprick sensation in the medial, dorsal, and lateral aspects of the foot
- Significant or progressive neuromotor deficit requires surgical consultation.

Straight leg raise (SLR) should be assessed bilaterally to evaluate for nerve root impingement, including but not limited to disc herniation.

- Positive SLR is defined as pain in the posterior leg that radiates below the knee with the patient lying supine and the hip flexed 60 degrees or less, is suggestive of disc herniation.
- Negative SLR rules out surgically significant disc herniation in 95% of cases.

### **Laboratory Evaluation**

Consider a CBC (complete blood count) and erythrocyte sedimentation rate if suspicion of cancer or infection.

### **Referral**

Early referral to physical therapy or another trained spine therapy professional could be considered. (See Annotations #13, "Re-evaluate and Consider Redirection," and Annotation #23, "Discuss Options and Consider Possible Surgical or Non-surgical Back Specialist" for details on specialties and treatments.)

- Referral could be considered when patient presents with severe incapacitating, disabling back or leg pain; or
- Patient has significant limitation of functional or job activities

### **Lumbar Spine X-ray (AP and LAT views) Red Flag Indications**

Generally AP and LAT x-rays are *not* useful in the *acute* setting but *may* be warranted with:

- Unrelenting night pain or pain at rest (increased incidence of clinically significant pathology)
- History or suspicion of cancer (rule out metastatic disease)
- Fever above 38 degrees C (100.4 degrees F) for greater than 48 hours
- Osteoporosis
- Other systemic diseases
- Neuromotor or sensory deficit
- Chronic oral steroids
- Immunosuppression
- Serious accident or injury (fall from heights, blunt trauma, motor vehicle accident)--this does not include twisting or lifting injury unless other risk factors are present (e.g., history of osteoporosis) and
- Clinical suspicion of ankylosing spondylitis

Other conditions that may warrant AP or LAT x-rays:

- Over 50 years old (increased risk of malignancy, compression fracture)
- Failure to respond to four to six weeks of conservative therapy
- Drug or alcohol abuse (increased incidence of osteomyelitis, trauma, fracture)

Oblique view x-rays are not recommended; they add only minimal information in a small percentage of cases, and more than double the exposure to radiation.

***Evidence supporting this recommendation is of classes: C, R***

## **5. Home Self-Care Treatment Program**

### **Key Points:**

- Low back pain is common and most patients significantly improve in four to six weeks.
- The long-term course of low back pain is typically a return to previous activities though often with incomplete recovery of pain.
- Patients should be re-evaluated if there is not significant improvement in one to three weeks or symptoms progress.

When patients are improving they should continue self-care as outlined. Document the phone triage and home self-care treatment in the patient's medical record (e.g., no appointment is needed at this time, patient is

improving with home self-care instructions and will call back if questions arise or condition changes).

### **Etiology**

- Pain in the lower back is very common. It can be related to certain activities, poor posture, physical stress, or psychological stress. Ninety percent of back pain patients improve within four to six weeks.
- Consider telling the patient that approximately two-thirds of the people who recover from a first episode of acute low back symptoms will have another episode within 12 months. Unless the back symptoms are very different from the first episode or there is a new medical condition, expect improvement to be similar for each episode.
- When pain or weakness lasts longer than six weeks, more specialized treatment(s) may be needed. For this reason it is important for the patient to keep the doctor informed of his or her progress.
- Other etiologies include pregnancy, labor, menstrual period, urinary tract problems, stomach upset with nausea, vomiting, and diarrhea

Instruct the patient to do the following:

- Carefully introduce activities back into his or her day as he or she begins to recover from the worst of the back pain episode. Light-duty activities and regular walking are good ways to get back into action.
- Apply ice packs or heat as preferred on the sore area will keep the inflammation down, and short duration in a position of comfort may be helpful.
- Use over-the-counter anti-inflammatory medications (e.g., aspirin, ibuprofen, naproxen sodium) or acetaminophen to help ease the pain and swelling in the lower back. If stomach complaints persist, call your provider
- Learn safe back exercises and make them a *regular* part of your lifestyle. Some studies support a strengthening program and targeting specific muscles.
- Take time to relax. Tension will only make your back feel worse.

Instruct the patient to call back in one to three weeks if:

- No improvement with home management
- Significant pain persists beyond a week
- Symptoms persist, worsen, or progress
- Improvement in symptoms, reinforcement of self-care program

***Evidence supporting this recommendation is of classes: A, D***

### **9. Consult or Refer**

Complete a diagnostic workup or refer to appropriate medical specialty for serious underlying conditions (e.g., cancer, or other systemic illness.) Each medical group may have other indications for specialty referral.

**Consult or refer to neurosurgery or orthopedic surgery if:**

- The patient is surgical candidate.
- Signs or symptoms of Cauda Equina Syndrome are present.
- Signs or symptoms of progressive or significant neuromotor deficit (e.g., foot drop, functional muscle weakness such as hip flexion weakness, or quadriceps weakness) are present.
- Neuromotor deficit persists after four to six weeks of conservative treatment (does not include minor sensory changes or reflex changes).
- The patient has chronic sciatica with positive SLR longer than six weeks.

**Consult or refer to neurology (limited special indications)**

- The patient has chronic sciatica longer than six weeks.
- The patient has atypical chronic leg pain (negative SLR).
- The patient has new or progressive neuromotor deficit.

**10. Has the Patient Failed Conservative Treatment?**

**Key Points:**

- Most patients who experience low back pain will have a recurrence within 12 months.
- Remaining active leads to a more rapid recovery with less chronic pain.
- Bed rest is not recommended. If the patient must rest, bed rest should be limited to no more than two days.
- It is important to evaluate non-physical factors that may impact returning to work or ongoing disability.
- The longer term course of low back pain is typically of a return to previous activities though often with incomplete recovery of pain.

**Conservative Treatment:**

- Most patients who seek attention for their back pain will improve within two weeks. Most patients experience significant improvement within four weeks.
- Approximately two-thirds of the people who recover from a first episode of acute low back symptoms will have another episode within 12 months. Unless the back symptoms are very different from the first episode or the patient has a new medical condition, expect improvement to be similar for each episode.
- Recommend cold packs or heat as preferred by the patient.
- Recommend analgesic medication for short-term (less than 3 months) symptom control. Clinicians should consider the risk and benefits of any medication and prescribe the lowest effective dose possible.
- Muscle relaxants are sometimes helpful for a few days but can cause drowsiness.
- Narcotic analgesics are rarely indicated
- If the patient has been involved in home care and has had an adequate trial prior to the first visit, consider referral to a spine



therapy professional on the initial visit. (See Annotation #14, "Consider Referral to a Spine Care Specialist.")

- While the work group acknowledges it is common practice to prescribe oral steroids for some patients, at this time there is not significant primary evidence to support it.

### **Activity Recommendations:**

Patients with acute low back pain should be advised to stay active and continue ordinary activity within the limits permitted by the pain. Remaining active leads to more rapid recovery with less chronic disability and fewer recurrent problems than either bed rest or back mobilizing exercises.

*[Conclusion Grade I: See Conclusion Grading Worksheet A -- Annotation #10, (Conservative Treatment) in the original guideline document].*

- Activity modification
  - Continue routine activity while paying attention to correct posture.
  - Patients with acute low back problems may be more comfortable if they temporarily limit or avoid specific activities known to increase mechanical stress on the spine, especially prolonged unsupported sitting, heavy lifting, and bending or twisting the back, especially while lifting.
  - Activity recommendations for the employed patient with acute low back symptoms should take into consideration the patient's age and general health, and the physical demands of the patient's job.
  - Patients should discontinue any activity or exercise that causes spread of symptoms (peripheralization).
- Bed rest
  - Bed rest is not recommended. If the patient must rest, bed rest should be limited to no more than two days and only as an option for patients with severe initial symptoms of primarily leg pain.
  - A gradual return to normal activities is more effective and leads to more rapid improvement with less chronic disability than prolonged bed rest for treating acute low back problems.
  - Prolonged bed rest for more than four days may lead to debilitation and is not recommended for treating acute low back problems.
- Exercise
  - Patients should discontinue any activity or exercise that causes spread of symptoms (peripheralization)
  - Low stress aerobic and flexibility exercise can prevent debilitation due to inactivity during the first month of symptoms and thereafter may help to return patients to the highest level of functioning appropriate to their circumstances.
  - Recommended exercise quotas that are gradually increased result in better outcomes than telling patients to stop exercising if pain occurs. Aerobic (endurance) programs which minimally stress the back (walking, biking, or swimming) can be started

during the first two weeks for most patients with acute low back problems.

- Strengthening exercises for trunk muscles (especially back extensors), gradually increased, are helpful for patients with low back problems.
- It is important to consult with a medical specialist, such as a qualified spine specialist, who can evaluate individual symptoms and recommend a safe and effective program. Self-treating with an exercise program not specifically designed for the patient may aggravate your symptoms.
- Consider referral to a formal rehab program.

**Self Care Brochure** (See Support for Implementation, "Other Resources Available" in the original guideline document):

In general, brochures and information that place a greater emphasis on reducing fear and anxiety and promoting active self-management have a greater opportunity for improving outcomes than traditional brochures that emphasize anatomy, ergonomics, and specific back exercises.

Specific content recommendations include:

- Absence of serious disease is likely when red flags are not present
- Hurt does not equal harm.
- There is a good prognosis for low back pain. The majority of patients experience significant improvement in two to four weeks.
- Bed rest is not recommended and should be limited to no more than two days.
- Light activity will not further injure the spine and light activity typically helps speed recovery.
- A progressive resumption of work and activity levels leads to better short-term and long-term outcomes.
- Information and advice may be helpful regarding specific painful or limited activities, such as sitting, lifting, getting up from bed.

### **Return to Work:**

- Tell patients experiencing an episode of acute back pain that their pain is likely to improve and that the large majority of patients return to work quickly. They should understand that complete pain relief usually occurs after, rather than before, resumption of normal activities and their return to work can be before they have complete pain relief. Working despite some residual discomfort poses no threat and will not harm them.
- All persons recovering from back pain should understand that episodes of back pain may recur but can be handled similarly as the one from which they are recovering.
- Patients can reduce the likelihood of back pain recurrence by making exercise and lifestyle changes, as noted elsewhere.
- Consider using the following questions to guide your discussion about non-physical factors that can significantly impact risk for ongoing disability and return to work:

- Do you enjoy the tasks involved in your job?
- Do you get along with your closest or immediate supervisor?

#### **Follow-Up Visit:**

Because most patients with acute pain improve by two weeks, a conservative treatment approach is recommended. Low back pain patients who are not improving or who experience significant limitation of daily activity at home or work should contact their provider within one to three weeks of the initial evaluation. Patients who are improving should continue home self-care.

Red flag and psychosocial indicators should be reviewed and evaluated at each contact/visit. It is the consensus of the work group that an assessment that includes a subjective pain rating, functional assessment, and a clinician's objective assessment should be done at each visit.

It is the consensus of the work group that patients who are improving should consider a follow-up with their provider. The benefit is to reinforce education and lifestyle changes that have enabled the patient to improve. This provides for outcome measures to be assessed as identified in the aims and measures section of the original guideline document.

***Evidence supporting this recommendation is of classes: A, C, M, R***

### **13. Re-evaluate and Consider Redirection**

#### **Key Points:**

- A spine care specialist consistently demonstrates competency in providing therapies based on continuing education and effective techniques supported by literature.

Choice of the trained professional will be determined by availability and preference of individual medical providers and organization systems. The patient and/or physician should request a trained spine therapy professional who consistently demonstrates competency in providing therapies for patients with low back pain based on effective techniques supported by literature as outlined in this guideline.

These therapies include education, exercise programs, and appropriate use of manual/manipulative therapies. Individuals who *may* have training in these therapies include physical therapists, chiropractic providers, osteopathic or allopathic physicians.

The following should be considered when selecting a spine therapy professional who will effectively evaluate and treat the lumbar spine, pelvic girdle (including sacroiliac [SI] joint), and muscle imbalances (piriformis):

#### **Physician or Spine Therapy Professional**

- Participants should be in additional training and in ongoing continuing education courses in manual treatment of the spine
- Years of experience treating spine patients
- Volume of patients treated for spine dysfunction in the past year
- Number of referrals an individual provider receives on a regular basis

### **Spine Therapy Professional**

- Provides treatment interventions which include manipulation, exercise, and education
- Average number of visits per episode of care for low back pain
- Percentage of patients who return to previous level of activity

Indications for referral include:

- Failure to make improvement with home self-care after two weeks
- Severe incapacitating and disabling back or leg pain and
- Significant limitation of functional or job activities

The professional's treatment plan should include both education and exercise. The treatment plan may include modalities, if necessary, to enable an individual to carry out an exercise program and self-care. It may also include limited passive treatments such as manual therapy (e.g., includes manipulation and mobilization), among others. Spinal manipulation should not be done if pre-manipulative testing peripheralizes symptoms.

Passive treatments are to be minimized and used only to progress an individual toward independence in exercise and self-care. Active treatment such as exercise must be introduced within a week of initiating passive treatments.

Within three to four visits, the patient must display documented improvement in order to continue therapy. If no improvement is noted, a comprehensive re-evaluation should be performed by the spine care professional for other causes of low back pain including regional SI joint dysfunction.

Continued improvement must be documented for continued therapy. Typically no more than four to six visits are needed.

After nine visits the primary care provider should be consulted to continue therapy.

***Evidence supporting this recommendation is of classes: A, M, R***

### **15. Is Pain Chronic (Greater Than Six Weeks)?**

A patient with "recurrent acute" episodes will continue a trial of conservative treatment when the current symptoms are six weeks or less from onset. "Recurrent acute" means symptoms at some point improved, separating the current episode from previous episodes. When the current symptoms are

more than six weeks from onset, the patient should be regarded as chronic and the provider should move to the corresponding sections of the algorithm (box 16 and beyond in the original guideline document). Sacroiliac joint dysfunction may be a contributor to low back pain and radicular pain in some individuals. This needs to be considered as a potential origin of pain.

If at initial evaluation the patient is identified as chronic LBP, see Annotation # 16, "Chronic Low Back Pain". For chronic sciatica/radiculopathy see Annotation #19.

## **16. Chronic Low Back Pain**

A comprehensive re-evaluation including a general assessment (see Annotation #4, "Primary Care Evaluation and X-Ray Indications") should be done for patients not improving after six weeks. Most patients with acute back pain will improve within six weeks. Back pain and sciatica which persist longer than six weeks are defined as chronic.

An assessment that includes a subjective pain rating, functional assessment, and a clinician's objective assessment should be done.

See Appendix C, "Psychosocial Screening and Assessment Tools" in the original guideline document. See the NGC summary of ICSI guideline [Major Depression in Adults in Primary Care](#) for the diagnosis and treatment of depression.

For patients not improving after six weeks see "Lumbar Spine X-Rays (AP and LAT views) if Indicated" in this annotation and Annotation #19, "Chronic Sciatica/Radiculopathy," for imaging considerations.

Of the 10% of patients with chronic symptoms, 90% fall into the chronic LBP category and only 10% fall into the chronic sciatica category.

Physical factors which may lead to delayed recovery or prolonged disability include malignancy, infection, metabolic, or a bio-mechanical condition (e.g., sacroiliac joint dysfunction [SJD]). Consider blood testing (including CBC and erythrocyte sedimentation rate [ESR]) if there is suspicion of cancer or infection.

If the patient is not better, consider other etiologies for low back pain such as:

- Fractures
- Spondylarthropathies
- Infection
- Tumor
- Abdominal/pelvic pathologies
- Other sites of origin for low back pain such as facet syndrome, piriformis syndrome, stenosis, or claudication

### **Lumbar Spine X-rays (AP and LAT views) if Indicated**

Patients with chronic LBP or acute LBP who are not improving should receive consideration for further diagnostic testing. (See Annotation #4, "Primary Care Evaluation and X-ray Indications" above.) Oblique view x-rays are not recommended; they add only minimal information in a small percentage of cases, and more than double the exposure to radiation.

Several x-ray findings are of questionable clinical significance and may be unrelated to back pain. These findings include:

- Single disk space narrowing
- Spondylolysis
- Lumbarization
- Sacralization
- Schmorl nodes
- Spina bifida occulta
- Disk calcification
- Mild to moderate scoliosis

***Evidence supporting this recommendation is of classes: C, M***

## **17. Active Rehabilitation**

There is strong evidence that exercise therapy is effective for chronic LBP. However, there is inconclusive evidence in favor of one exercise over the other--flexion, extension, fitness. [*Conclusion Grade I: See Conclusion Grading Worksheet B -- Annotation #17 (Active Rehabilitation) in the original guideline document*]. High-grade mobilization/manipulation has been shown to be effective early in treatment when followed by appropriate active rehabilitation.

The treatment of chronic low back pain should include:

- Education (back book and advice by provider)
- Active self-management
- Gradual resumption of normal light activities as tolerated
- Prevention - good body mechanics
- Exercise - many studies show the benefit of an exercise program with chronic low back pain
  - Inconclusive evidence in favor of one exercise over the other (flexion, extension, or fitness)
  - Consider a graded active exercise program.
  - Consider specific exercises to strengthen the core trunk stabilizing muscles.
  - Consider intensive exercise program.
- Assess and manage psychosocial factors
- Multidisciplinary approach

***Evidence supporting this recommendation is of classes: A, B, C, D, M, R***

## **19. Chronic Sciatica/Radiculopathy**

**Key Points:**

- Magnetic resonance imaging (MRI) and computed tomography (CT) are not useful during acute sciatica unless red flag indications are present.

See Annotation #16, "Chronic Low Back Pain" for a comprehensive physical and psychosocial evaluation including a subjective pain assessment, functional assessment, and a clinician's objective assessment.

**MRI or Lumbar Spine CT Imaging Indications When Patient is a Potential Surgical Candidate**

MRI and CT generally are not useful during acute low back pain or acute sciatica unless surgery, cancer, or infection are considerations (red flag indications). If the primary care provider is uncertain whether an MRI or CT should be ordered, consultation with an appropriate consultant when the patient meets surgical referral criteria should be considered. (See Annotation #21, "Consider Epidural Steroid Injection Prior to Surgical Intervention.") Each medical group may have specific arrangements for ordering CT, MRI, or other special diagnostic tests prior to referral to a surgical back specialist.

In isolated cases of low back pain without radicular symptoms, MRI is the preferred diagnostic test. However, in an otherwise healthy adult without a previous history of back surgery and symptoms of low back pain with radicular symptoms, a CT scan may be as sensitive as an MRI.

The Adult Low Back Pain guideline work group has listed advantages for both CT and MRI imaging and a list of conditions for each. This list is not meant to be comprehensive but to aid the clinician in making a decision.

**MRI Indications:**

- Major or progressive neurologic deficit (e.g., foot drop or functionally limiting weakness such as hip flexion or knee extension)
- Cauda Equina Syndrome (loss of bowel or bladder control or saddle anesthesia).
- Progressively severe pain and debility despite conservative therapy
- Severe or incapacitating back or leg pain (e.g., requiring hospitalization, precluding walking, or significantly limiting the activities of daily living).
- Clinical or radiological suspicion of neoplasm (e.g., lytic or sclerotic lesion on plain radiographs, history of cancer, unexplained weight loss, or systemic symptoms).
- Clinical or radiological suspicion of infection (e.g., endplate destruction of plain radiographs, history of drug or alcohol abuse, or systemic symptoms).
- Trauma (fracture with neurologic deficit, compression fracture evaluation in elderly patients with question of underlying malignancy, characterization in anticipation of vertebroplasty/kyphoplasty, stress fracture or subacute spondylosis in a patient less than 18 years of age).

- Severe low back pain or radicular pain, unresponsive to conservative therapy, with indications for surgical intervention.

For patients with mild to moderate claustrophobia, benzodiazepines one-hour prior to scan is effective. The patient will need to be accompanied by a driver.

#### **MRI Advantages:**

- Better visualization of soft tissue pathology; better soft tissue contrast
- Direct visualization of neurological structures
- Improved sensitivity for cord pathology and for intrathecal masses
- Improved sensitivity for infection and neoplasm
- No radiation exposure
- Safer for women who are pregnant, especially in the 1st trimester due to no radiation exposure

#### **CT Indications:**

- Major or progressive neurologic deficit (e.g., foot drop or functionally limiting weakness such as hip flexion or knee extension)
- Cauda Equina Syndrome (loss of bowel or bladder control or saddle anesthesia).
- Progressively severe pain and debility despite conservative therapy
- Clinical or radiological suspicion of neoplasm (e.g., lytic or sclerotic lesion on plain radiographs, history of cancer, unexplained weight loss, or systemic symptoms)
- Bone tumors (to detect or characterize)
- Severe or incapacitating back or leg pain (e.g., requiring hospitalization, precluding walking, or significantly limiting the activities of daily living).

#### **CT Advantages:**

- Better visualization of calcified structures
- Direct visualization of fractures
- Direct visualization of fracture healing and fusion mass
- More accurate in the assessment of certain borderline or active benign tumors
- More available and less costly
- Better accommodation for patients over 300 lbs and patients with claustrophobia
- Safer for patients with implanted electrical devices or metallic foreign bodies
- Less patient motion. Particularly useful for patients who cannot lie still or for patients who cannot cooperate for an MRI

Other special diagnostic tests such as myelogram, electromyography (EMG), radio nuclide studies (RNS), and bone scan should be ordered as each medical group dictates and consider the preference of the specialist when referral is planned.



See Appendix D, "CT and MRI Order Sets" in the original guideline document.

***Evidence supporting this recommendation is of classes: C, R***

## **21. Consider Epidural Steroid Injection Prior to Surgical Intervention**

### **Key Points:**

- Epidural steroid injections should only be considered after initial appropriate conservative treatment program has failed.
- Successful epidural steroid injections may allow patients to advance in a conservative treatment program.
- Epidural steroid injects should be performed under fluoroscopy with contrast for best results

There is limited evidence for epidural steroid injections; therefore, it is important that outcome data be gathered in order to grow the evidence.

The goal of epidural steroid injections in patients with back or leg pain and stenosis or a herniated disc on MRI or CT is pain control and functional improvement. Several studies have shown that a single epidural injection affords short-term relief of pain although in one randomized controlled trial, the steroid group seemed to experience a "rebound" phenomenon.

Based on limited data, the results appear promising. However, at this time there is insufficient evidence for the efficacy of epidural steroid injections. Epidural steroid injections should only be considered after initial appropriate conservative treatment program has failed. Successful epidural steroid injections may allow patients to advance in a conservative treatment program.

Injections should be performed under fluoroscopy and with contrast in order to deliver cortisone as close to the disc herniation, area of stenosis, or nerve root impingement as determined by MRI or CT, and with as little morbidity as possible. Failure of treatment may result from a failure to deliver medications to the treatment field.

No study has shown a clear advantage of one approach (interlaminar, caudal, or transforaminal), type of cortisone or volume of injectate. The approach needs to be individualized to each patient.

Procedural morbidity also varies with each approach. With interlaminar injections there is a risk of intrathecal injection and subsequent arachnoiditis, as well as post-procedural headaches. With transforaminal injections, patients frequently report significant, although in most cases transient, leg pain and there is a risk of spinal cord infarction when injected above L2.

### **Patient Selection**

- Patients should have predominantly complaints of leg pain in a dermatomal distribution with corroborative examination findings for

radiculopathy (reflex changes, possible motor weakness, and root tension signs.) In addition, the pain should be of the severity that significantly limits function and quality of life and has not responded to oral analgesic medications and other conservative care measures.

- Corroborative neural axis imaging is required, either MRI or CT, with evidence of disk disease or bony stenosis which fits with the clinical syndrome.
- Patients should have no contraindications to injection therapy, including:
  - No signs or symptoms of active infection either systemically or locally
  - No history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel; allow the patient to "drift" to the lowest effective International Normalized Ratio (INR) prior to procedure
  - No allergies to local anesthetic agents, contrast agents, or corticosteroids
  - No prior complications to corticosteroid injections
- Pregnancy is a contraindication for the use of fluoroscopy.
- Caution should be used in diabetic patients because of altered glycemic control, which is typically transient.
- Patients with congestive heart failure need to be aware of steroid-induced fluid retention.
- Though non-steroidal anti-inflammatory drug (NSAID) use is not a contraindication to injections, some practitioners discontinue NSAIDs several days prior to injection.

***Evidence supporting this recommendation is of classes: A, C, D, R***

## **23. Discuss Options and Consider Surgical or Non-Surgical Back Specialist**

### **Key Points:**

- The appearance of a disc herniation does not rule out a course of conservative therapy. Unless red flag indications are present, all patients should undergo a trial of conservative therapy.
- The decision to operate is a clinical decision based on the presence of severe, uncontrolled pain, profound or progressive neurological symptoms, or a failure to respond to conservative therapy.

Refer to the original guideline document for indications for the following specialty referrals: physiatrist/physical medicine and rehabilitation, medical orthopedics, neurology, occupational medicine, rheumatology.

Special diagnostic tests can be used to help clinicians decide the appropriate referral to a specialist. To decide which test, consult with subspecialty physicians.

- Bone scan (limited with single photon emission computer tomography [SPECT])
- EMG (electromyography)
- CT enhanced myelogram

- Myelogram
- RNS (radionuclide studies)

#### Neurosurgery or orthopedic surgery

- Patient is surgical candidate.
- Cauda Equina Syndrome
- Progressive or severe neuromotor deficit (e.g., foot drop or functional muscle weakness such as hip flexion weakness or quadriceps weakness)
- Persistent neuromotor deficit after four to six weeks of conservative treatment (does not include minor sensory changes or reflex changes)
- Chronic sciatica with positive SLR for longer than 4 to 6 weeks
- Uncontrolled pain

Patients with large, extruded, sequestered, or high-signal-intensity disc herniations do not have a worse prognosis than do patients with smaller contained disc herniations or protrusions. The presence of a disc extrusion or sequestration is not an indication for immediate surgery.

- The appearance of a disc herniation on MRI/CT (including extruded/sequestered disc) does not determine whether an individual patient will respond to conservative therapy. Assuming that the patient's pain can be controlled and that no red flags or contraindications exist, all patients should undergo a trial of conservative therapy.
- The decision to operate is a clinical one, not a radiologic one, and is generally based on the presence of severe, uncontrolled pain, profound or progressive neurological symptoms, or a failure to respond to conservative therapy.
- Even though it was not discussed above, it is important to emphasize the concept that a disc herniation on MRI/CT is of relevance only with respect to specific clinical symptoms. Disc herniations can be seen in asymptomatic patients, and one can surmise from the literature quoted that if a patient's symptoms resolve and the disc herniation does not resorb, it will be present on the next examination.

***Evidence supporting this recommendation is of classes: A, C, D, R***

#### **Definitions:**

#### **Conclusion Grades:**

**Grade I:** The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

**Grade II:** The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

**Grade III:** The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

**Grade Not Assignable:** There is no evidence available that directly supports or refutes the conclusion.

### **Classes of Research Reports:**

#### **A. Primary Reports of New Data Collection:**

##### **Class A:**

- Randomized, controlled trial

##### **Class B:**

- Cohort study

##### **Class C:**

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

##### **Class D:**

- Cross-sectional study
- Case series
- Case report

#### **B. Reports that Synthesize or Reflect upon Collections of Primary Reports:**

##### **Class M:**

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R:

- Consensus statement
- Consensus report
- Narrative review

Class X:

- Medical opinion

## **CLINICAL ALGORITHM(S)**

A detailed and annotated clinical algorithm is provided for [Adult Low Back Pain](#).

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The type of supporting evidence is classified for selected recommendations (see "Major Recommendations").

In addition, key conclusions contained in the Work Group's algorithm are supported by a grading worksheet that summarizes the important studies pertaining to the conclusion. The type and quality of the evidence supporting these key recommendations (i.e., activity recommendations for patients with acute low back pain; exercise therapy for patients with chronic back pain) is graded for each study.

## **BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS**

### **POTENTIAL BENEFITS**

Appropriate medical evaluation, treatment, and management of low back pain in adults including:

- Appropriate use of conservative treatment as a first-line approach
- Reduced use of unnecessary imaging studies
- Appropriate assessment of patients with chronic low back pain
- Increased use of outcome tools such as Oswestry Outcome Tool

### **POTENTIAL HARMS**

#### **Epidural Steroid Injection**

- Caution should be used in diabetic patients because of altered glycemic control which is typically transient. Also, patients with congestive heart failure need to be aware of steroid-induced fluid retention.
- With interlaminar injections there is a risk of intrathecal injection and subsequent arachnoiditis, as well as post-procedural headaches. With transforaminal injections, patients frequently report significant, although in

most cases transient, leg pain and there is a risk of spinal cord infarction when injected above L2.

## CONTRAINDICATIONS

### CONTRAINDICATIONS

- *Fluoroscopy*: Contraindications include pregnancy.
- *Steroid injections*: Contraindications include patients with signs and symptoms of active infection either systemically or locally, history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel, allergies to local anesthetic agents, contrast agents, or corticosteroids, prior complications to corticosteroid injections.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

- This clinical guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.
- This clinical guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients are urged to consult a health care professional regarding their own situation and any specific medical questions they may have.
- The Adult Low Back Pain guideline work group has listed advantages for both computed tomography (CT) and magnetic resonance imaging (MRI) and a list of conditions for each. This list is not meant to be comprehensive but to aid the clinician in making a decision.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

Once a guideline is approved for general implementation, a medical group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment, and tobacco cessation.

Detailed measurement strategies are presented in the original guideline document to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

## IMPLEMENTATION TOOLS

Chart Documentation/Checklists/Forms  
Clinical Algorithm  
Patient Resources  
Pocket Guide/Reference Cards  
Quality Measures  
Resources

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## RELATED NQMC MEASURES

- [Adult low back pain: percentage of acute low back pain patients without red flag indicators undergoing anterior-posterior \(AP\) or lateral \(LAT\) x-rays.](#)

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2006 Sep. 65 p. [124 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

1994 Jun (revised 2006 Sep)

## **GUIDELINE DEVELOPER(S)**

Institute for Clinical Systems Improvement - Private Nonprofit Organization

## **GUIDELINE DEVELOPER COMMENT**

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers, Allina Medical Clinic, Altru Health System, Aspen Medical Group, Avera Health, CentraCare, Columbia Park Medical Group, Community-University Health Care Center, Dakota Clinic, ENT Specialty Care, Fairview Health Services, Family HealthServices Minnesota, Family Practice Medical Center, Gateway Family Health Clinic, Gillette Children's Specialty Healthcare, Grand Itasca Clinic and Hospital, HealthEast Care System, HealthPartners Central Minnesota Clinics, HealthPartners Medical Group and Clinics, Hutchinson Area Health Care, Hutchinson Medical Center, Lakeview Clinic, Mayo Clinic, Mercy Hospital and Health Care Center, MeritCare, Mille Lacs Health System, Minnesota Gastroenterology, Montevideo Clinic, North Clinic, North Memorial Care System, North Suburban Family Physicians, Northwest Family Physicians, Olmsted Medical Center, Park Nicollet Health Services, Pilot City Health Center, Quello Clinic, Ridgeview Medical Center, River Falls Medical Clinic, Saint Mary's/Duluth Clinic Health System, St. Paul Heart Clinic, Sioux Valley Hospitals and Health System, Southside Community Health Services, Stillwater Medical Group, SuperiorHealth Medical Group, University of Minnesota Physicians, Winona Clinic, Ltd., Winona Health

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## **GUIDELINE COMMITTEE**

Committee on Evidence Based Practice

## **COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

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## **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

In the interest of full disclosure, Institute for Clinical Systems Improvement (ICSI) has adopted the policy of revealing relationships work group members have with companies that sell products or services that are relevant to this guideline topic. The reader should not assume that these financial interests will have an adverse impact on the content of the guideline, but they are noted here to fully inform readers. Readers of the guideline may assume that only work group members listed below have potential conflicts of interest to disclose.

Michael Goertz, MD is a member of the American College of Occupational and Environmental Medicine Guidelines Committee and Spine Work Group.

Glenn Buttermann, MD receives research support from Abbott Spine.

No other work group members have potential conflicts of interest to disclose.

ICSI's conflict of interest policy and procedures are available for review on ICSI's website at [www.icsi.org](http://www.icsi.org).

## **GUIDELINE STATUS**

This is the current release of the guideline.

This guideline updates a previous version: Routine prenatal care. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Aug. 80 p.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](http://www.icsi.org).

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: [www.icsi.org](http://www.icsi.org); e-mail: [icsi.info@icsi.org](mailto:icsi.info@icsi.org).

## **AVAILABILITY OF COMPANION DOCUMENTS**

The following are available:

- Adult low back pain. Executive summary. Bloomington (MN): Institute for Clinical Systems Improvement, 2006 Sep. 2 p. Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](http://www.icsi.org).

- Functional ability questionnaire. Annotation Appendix A. in the original guideline document. Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#)
- Oswestry low back pain scale. Annotation Appendix B in the original guideline document. Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#)
- Psychosocial screening and assessment tools. Annotation Appendix C in the original guideline document. Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).
- CT and MRI order set. Annotation Appendix D in the original guideline document. Electronic copies: Available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).
- ICSI pocket guidelines. April 2006 edition. Bloomington (MN): Institute for Clinical Systems Improvement, 2006. 298 p.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: [www.icsi.org](http://www.icsi.org); e-mail: [icsi.info@icsi.org](mailto:icsi.info@icsi.org).

## **PATIENT RESOURCES**

The following is available:

- Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement, 2006 Oct. 22 p.

Electronic copies: Available in Portable Document Format (PDF) from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

## **NGC STATUS**

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